Commentary on May 2008 Draft AASHTO Guide to"Creating Complete Corridors"

Preface

Page xi

This section flows more logically when paragraph 3 is moved ahead of paragraph 2.

Introduction - Purpose

Page xiv; 1st Para

The first sentence cites individuals who "develop, operate, and maintain . . .".
The next talks about those who "plan, design, construct, operate, and maintain . . ."

Paragraph 2 talks about a variety of "design, planning, construction, operations and maintenance" professionals.

This is needlessly redundant and a bit confusing.
Those two paragraphs could easily be pared back to one and still make the point that the Guide is targeted to a very diverse audience.

Para 3

Stakeholders are interested in more than just the "design" quality of their community.
I suggest deleting that word.

This Guide should not be viewed as a means to establish standards, but rather provide clarity on how creative solutions can be achieved within existing standards.
Suggested rewording: "work with transportation agencies to effectively incorporate Landscape and Environmental design into transportation programs and projects."

Introduction - Scope

This is a very wordy and confusing section that does not add much value.
I recommend deleting it.

A quick perusal of the Table of Contents ought to provide the reader with a good sense of what range of topics are or are not included.

The sample menu of guides and manuals would be better suited for an Appendix.

Chapter 1: "The Evolution of Process"

Page 2; 1st Para

The last half of this paragraph has been revised since the February Draft to be more nearly accurate. But, it's not entirely clear how the references to these AASHO standards are relevant to the broader discussion.

Page 3; 1st line

The AASHTO Guide to Achieving Flexibility "bridges" between FHWA's Flexibility in Highway Design publication and AASHTO's Green Book. AASHTO produced this document to help practitioners recognize and utilize the flexibility in the "Green Book" that FHWA's "Flexibility in Highway Design" had already highlighted

Page 5; Last line

I am having trouble making the connection as to why garnering support is critical to the project schedule "especially if the concepts are developed by an interdisciplinary professional team".

Chapter 2: "Defining . . . Road Class"

Are the cross-section graphics shown here meant to be legible? (They're not)

Chapter 2: "Defining . . ." Road Class – Freeway

Omit the phrase "but presenting challenges . . .".
Those challenges apply to every decision in freeway design, not just frontage roads.

Chapter 2: "Defining . . ." Road Class – Arterial

The statement in the last sentence about "the wide variety of forms this road type might take" is also true for the other 3 Road Classes. Why cite it only here?

Chapter 2: "Defining . . ." Road Class – Collector

The reference to the Access Management Manual research might be appropriate to include in the Chapter 4 section on Medians and/or Access Management. But, it's a level of technical detail that is out of context here. Just say "Three or five lane Collectors with continuous center turning lanes are sometimes used."

Chapter 2: "Defining . . ." Setting

The distinction between a "downtown" (Urban Core) and the "very built-up central part of cities and towns" (Urban) isn't entirely obvious. Consider rewording to make the distinction a little less subtle.

Page 11, Para 2

This sentence really should be the lead sentence for the next Section heading, immediately below.

Chapter 2: "Defining . . ." Roadway Corridor Types – Urban Core

In the first sentence, replace "exhibit" with "are characterized by".

The "titles" for each of the bullet items should be offset in a different font (or at least italicized) to set them apart from the rest of the section, like so: *Urban Core Freeways*

The commentary here (repeated several times elsewhere in the Guide) that these roads "often cannot meet all Green Book freeway standards" is open to debate. The statement falsely implies that minimum standards are routinely unachievable (and, therefore, perhaps shouldn't be strived for).
This pronouncement may also leave the reader with the false impression that Urban freeway design will almost certainly require design exceptions. One of the "Urban Myths" of CSS is the presumption that "flexible" design necessitates working outside the boundaries of existing standards.

Chapter 3: Performance Measures

Page xii (Preface) declared that "this is not a CSS guide".

Why, then, is there a CSS bullet segment appended to each of the Performance Measures that purports to be THE Context Sensitive Solution?

Chapter 3: Performance Measures - Introduction

2nd Para

Please delete the phrase "in 2005 by HNTB Corporation".
(It's a little too much self-promotion)

Chapter 3: Performance Measures - Safety

This section needs to be substantially reworked.

It paints a very distorted picture about how highway agencies approach project development, especially safety improvements. Indeed, much of the tone of this section is insulting, bordering on sarcastic. Most highway improvement projects are introduced to address a known safety, operational or serviceability problem – not because a roadway inventory shows the road to have substandard features. Most agencies are now embracing a more risk-based approach that assesses both "nominal" and "substantive" safety in establishing priorities. NCHRP Report 480 discusses this conceptual approach quite eloquently. I suggest liberally paraphrasing it here.

Chapter 3: Performance Measures - Mobility

This section advocates for better land use planning and alternatives to single-occupancy vehicles. But, where is the discussion of mobility as a Performance Measure???

Chapter 3: Performance Measures – Financial Feasibility

How is a discussion of taxing mechanisms and alternative strategies to generate revenues relevant to performance measures?

The concluding thought about how "millions of dollars can be saved" is way off base. The assertion that highway agencies "simply implement standards" is absurd.

Chapter 3: Performance Measures – Social and Economic

This document is not meant to be a platform for advocating public policy nor a historical account of societal ills.

This section should be completely redone.

Chapter 4: Elements - Geometrics

Page 27; Para 2

This paragraph is out of place here and grossly oversimplifies the concepts of nominal and substantive safety that should already have been thoroughly explained in Chapter 3.

Page 28; Para 2

How is it that "existing conditions often preclude a precise adherence to Green Book guidance"?

Chapter 4: Elements – Horizontal Alignment

The reference to the types of horizontal curves is not quite correct and is really unnecessary anyway. The paragraph that begins "Curves can be simple . . ." can be

entirely omitted. The same goes for the curve types referenced in the middle of the sentence that begins “A single sweeping curve . . .”.

Chapter 4: Elements – Vertical Profile

Page 27; Para 2

This discussion of vertical curves is still very convoluted and inaccurate.

The statement about a parabola “doubling the length it takes to rise any given distance” (and the accompanying example for a 4 percent grade) doesn’t make much sense.
And, why would we need to know this anyway?

There is also a reference to curve radii at the crest and sag for pedestrian and bicycle facilities. Parabolic curves are not described by curve radius.
If the author was, instead, describing a horizontal curve, the use of “radii” is appropriate. But, the logic for the “tighter” radius isn’t clear.

Chapter 4: Elements - Pavement

Page 31; Para 3

What is the basis for the specified speed threshold of 45 mph below which pavers are supposedly an appropriate design alternative?

Chapter 4: Elements - Transit

There are advantages and disadvantages to locating bus pull-outs both upstream and downstream of an intersection.
Please remove this one-sided recommendation or balance by citing the merits for an upstream location.

Chapter 4: Elements - Bridges

Page 40

In the paragraph that begins “When pedestrians”, replace the phrase “from the ground to” with “at the same level as”.

Chapter 4: Elements - Medians

There are several references to lateral offsets to plantings, including mature trees. Care should be exercised to ensure that any dimensions cited here are reasonable consistent with guidance from the AASHTO Roadside Design Guide. A revision to its Chapter 10, “Urban and Restricted Conditions is currently undergoing review by the AASHTO Technical Committee on Roadside Design.

The 2005 California study cited here is one of many research efforts trying to better assess and balance the safety risks of roadside trees. Simply citing this one study does not accurately reflect the divergence of professional opinion on this issue.

Chapter 4: Elements – Guardrails and Barriers

Most of this section is STILL inaccurate.

Page 46; Para 2

Barriers are not categorized as "those that absorb . . . and those that redirect"
They are categorized by their deflection characteristics – a particular concern when shielding fixed objects.

Barriers are also classified by their "Test Level" which relates their performance to expected impact speed and specific vehicle types.
For example,

Para 3

"Absorptive guardrails" should be "Flexible barriers".

All barriers are considered "permanent" except for work zone installations.

Para 4

All barriers are designed to be "crashworthy" and to capture and redirect errant vehicles. They are not meant to bring a vehicle to a "halt" or a "suddenly complete stop".

The "box-beam" guardrail utilized extensively by Wyoming and New York (where it's called "guiderail") is also categorized as a "Flexible" barrier system.

Para 5

Weathering steel W-beam barriers are a much greater maintenance headache than a painted barrier — particularly where deicing chemicals are used – because accelerated corrosion can weaken the rail element to the point of being non-functional.

Planting large shrubs in front of a run of guardrail can significantly degrade the safety performance of the barrier and can themselves constitute a roadside hazard.

Para 6

The "F" barrier (actually an "F-Shape" barrier) is not the most common concrete safety shape barrier.

There is no such a thing as a “J” barrier (actually a “New Jersey Shape” barrier)
The straight-faced barrier is actually a “Vertical Face” barrier. Or was this meant to be a reference to the “Constant-Slope” barrier?

In either case, they are not supplanting the F-shape or NJ-shape barrier.

Page 47; Para 2

Another notable example is the “Low-profile” barrier that some jurisdictions have used to safely accommodate planting in narrow medians.

Para 4

What is the basis for the statement that wood planks “redirect errant vehicles and also serve as sacrificial absorptive material”?

Chapter 4: Elements – Roadside - Grading

Page 57

Please do not advocate the use of earth berms for “energy dissipation” or to “eliminate the need for crash cushions”. In some cases, a poorly designed berm can cause vehicles to vault or overturn or even induce an out-of-control situation for an encroaching vehicle that might not have occurred had the roadside been graded relatively flat and free of fixed-object hazards.

{Hmmm, I’m just curious . . . Could those possibly be Apple trees in the middle of Microsoft’s landform buffer???}

Chapter 4: Elements – Vegetation – Roadside Plantings and Safety

Page 63; Para 4

The primary purpose of guardrail is to shield motorists from hazards in the roadside, not “avoiding tree damage”.

Para 6

The use of shrubs as crash attenuators would also prove problematic because several small caliper trees and shrubs can actually lean back enough to “launch” a vehicle into the hazard they were meant to shield.

Two good references worth mentioning for guidance on how best to safely accommodate trees in roadsides and medians are the NCHRP 500 Series, Volume 3? on Trees in Hazardous Locations and the FHWA-sponsored DVD “Highway Safety and Trees: The Delicate Balance”

Chapter 4: Elements – Vegetation Management

Page 71

What are “danger trees”?
What is an “IRVM” plan??

Chapter 4: Elements – Noise Abatement

Is there a generic name that can be substituted for the tradename Plexiglas?
(My dictionary describes it as a “lightweight, transparent, thermoplastic synthetic resin”)

Chapter 4: Elements – Site Furnishings

The abbreviation “ADAGG” is not correct.
It should be “ADAAG” (Americans with Disabilities Act Accessibility Guidelines)

Chapter 4: Elements – Visual Impact Assessment

In the first sentence of paragraph 2, italicize “from” and “of”.

Chapter 4: Elements – Access Management

Page 93; Para 5

The TRB study regarding the safety of TWLTL has been contradicted by other studies.

Para 6

Why are we citing this research here?
It’s but one isolated reference from a sea of research studies and numerous policies and guidelines on Auxiliary Lanes. (The AASHTO Green Book has in excess of 30 pages discussing Left-turn lanes alone)

It’s a level of technical detail that doesn’t belong here, but rather should be sought from other sources.

Chapter 5: Creating Corridors - General Comments

Page 95; Para 4

This paragraph refers twice to “general guidelines”.
With that in mind, why, for example, is there very prescriptive advice about using “colored or stamped pavement” in the 2nd bullet on Page 96?
The broad categories that head the bulleted lists carry over from Chapter 4.

To help the reader tie this discussion back to Chapter 4, why not extend that framework to include the various subsections from Chapter 4?

For example, the bulleted list for “Roadside” should logically follow with items keyed to “Grading”, “Hydrology”, “Vegetation” and so on.

This approach would also help insure that the Guide addresses most or all of the elements and subelements covered in that chapter.

Unfortunately, for example, as it now stands, the section on “Roadside” for every one of the 24 typologies is completely silent on the issue of roadside safety.

In many cases, these bulleted entries seem to be almost random (as if drawn from a hat), and not obvious as to why they are uniquely characteristic of each “typology” or associated with a certain element.

On pages 96 and 97, there are three separate instances of the advice about local streets passing under a freeway needing to be wide enough for pedestrians, bikes and transit. Why is that redundancy necessary or helpful?

For that matter, why is such a foundational element (considering the needs of all highway users) nestled in the fine print here?

Chapter 7: Practice Examples

Can we choose another title for this chapter?
As it is now, the phrase “Practice Examples” conjures up an image of a textbook.

Thank you for the opportunity to review and comment!

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